Abstract

Author: Anna Šalbabová

Title: Influence of acrobatic sports on dynamic postrual stability

Objectives: The aim of this study is to evaluate an influence of acrobatic sports on dynamic postural stability with greater focus on vestibular system and reaction time of the subjects and to compare those qualities with non-acrobatic subjects who have no history of acrobatic training.

Methods: Assessments were performed on NeuroCom Smart Equi Test device, which is located in laboratory of kinesiology at the UK FTVS. There were 20 subjects divided into 2 groups 10 subject each. One group made of 10 acrobatic athletes, the second group of 10 non-acrobatic subjects with no history of acrobatic training. The age of all subjects ranges from 20 to 34 years. For the testing of dynamic postural stability were used Sensory Organization Test (SOT), Motor Control Test (MCT), Head Shake – Sensory Organization Test (HS-SOT). For assessment of vestibulo-ocular reflex was used Dynamic Visual Acuity Test (DVAT), which cannot be performed without Perception Time Test (PPT).

Results: The results have shown significantly better reaction times of acrobatic group in MCT and better results of acrobatic group in Head Shake – SOT in half of the performed tests. SOT and DVAT have shown no significant data.

Conclusion: This study has not proved that acrobatic athletes have better dynamic postural stability in easy postural tasks comared to non-acrobatic subjects. Tests, aimed on assessing the reaction time after unexpected destabilizing stimuli, have proved that acrobatic athletes need shorter time to regain balance. Their vestibular system has also showen better results however just in half of performed tests. The further research on thist topic is needed.

Keywords: Acrobatic, acrobatic sports, dynamic postural stability, computerized dynamic posturography; NeuroCom, Smart Equi Test, posture, stability, vestibular system, reaction time.